E74-10550
CR-138299

MONTHLY REPORT, APRIL 1974

Contract Number: NAS 9-13303

QUANTITATIVE DETERMINATION OF STRATOSPHERIC AEROSOL CHARACTERISTICS

Bill Johnson, supporting PIMO, informed us that the S190 film data with its associated step wedges was generated improperly for the SL-3 mission acquisitions. He indicated that new imagery and calibrated step wedges will need to be prepared and sent. This means that the densitometry work on the originally issued film is of little value. All work will be redone on the calibrated film. A sensitometry manual will also be sent. The problem was uncovered when we scanned the film with the microdensitometer and found the step wedge was on a finer grain film than the data film. Also none of the wedges received corresponded to film roll numbers for the data. Since the step wedges should be on each data film strip and should be processed with the data to record the summary effects of all processing, it became clear that there had been an error. It is again unfortunate that an additional delay and expense has occurred due to data problems.

The Skybet tapes received earlier will need to be regenerated with a precision process. The current accuracy allows determination of the sensor pointing vector within thirty kilometers at the earth's limb. Thirty kilometers accuracy is sufficient for latitude, longitude location on the earth's surface, but it is of course grossly inadequate for location of the sensor field of view in the stratosphere.

The inversion of the Limb brightness signature from a slant path intensity profile to a vertical attenuation coefficient profile is implemented on the computer system and is performing well on synthetic data. Different conditions require various modifications, so all cases have not yet been tested, but all results are positive so far. This program is for the 180° scatter case; other off-axis scattering has not been solved analytically yet for this inversion.

(E74-10550) QUANTITATIVE DETERMINATION OF STRATOSPHERIC AEROSOL CHARACTERISTICS Monthly Report, Apr. 1974 (Boeing Co., Kent, Wash.) 2 p HC $4.00 CSCL 04A

N74-25866

Unclas
G3/13 00550

The S192 screening film of SL4 pass 65 was sent April 26,1974. This is the Limb pass that was acquired with the S192 alignment light left on. THe film shows a data wipe-out at a frequency of 1.5 kilohertz. Because of the extraneous light source and the observed effects in some scans and wavelengths, it is questionable how much we can rely on any of the data from this pass. For this reason we have decided to request our data from other passes and from this pass only as an addition to the original data allocation. Should an evaluation of the data from this pass be performed and the data determined to be acceptable, then the data from this pass would be more desirable.

We have elected to not receive the S191 data tapes until all of the processing and calibration problems have been resolved. The alternative would have been to receive data with some of the channels in error, to be corrected at a future date. However, we have requested one reel to verify our tape reading program and to gain some experience in handling the data before the corrected data arrives.